

Life Actuarial (A) Task Force/ Health Actuarial (B) Task Force Amendment Proposal Form*

1. Identify yourself, your affiliation and a very brief description (title) of the issue.

Identification:

American Academy of Actuaries, Life Practice Council, Life Reserves Subcommittee (formerly LRWG)

Title of the Issue:

Discount Rate for VM-20 Stochastic Reserve

2. Identify the document, including the date if the document is “released for comment,” and the location in the document where the amendment is proposed:

January 1, 2026, NAIC Valuation Manual

VM-20 Sections 5.B and 7.H; VM-31 Sections 3.D.2 and 3.D.6

3. Show what changes are needed by providing a red-line version of the original verbiage with deletions and identify the verbiage to be deleted, inserted or changed by providing a red-line (turn on “track changes” in Word®) version of the verbiage. (You may do this through an attachment.)

See attached.

4. State the reason for the proposed amendment? (You may do this through an attachment.)

We propose modifying the discount rate used to calculate the scenario reserves, similar to VM-21, within the VM-20 Stochastic Reserve (SR) to be the Net Asset Earned Rate (NAER) on additional assets while also allowing for the Direct Iteration Method (DIM) as an alternative approach to calculating these scenario reserves. We followed the general approach for VM-21 but didn’t replicate the language exactly to clarify inconsistent wording in VM-21. The primary reason for making this change is the new Generator of Economic Scenarios (GOES) leads to instances of negative interest rates, which calls into question the appropriateness of discounting at 105% of a Treasury Rate. Changing to the NAER will allow for more appropriate discounting in these types of scenarios. Secondly, the existing methodology of using SR discount rates equal to 105% of the path of 1-year Treasury rates does not have a clear, strong rationale for use. The methodology originated from C3P2 Standard Scenario for variable annuities, and the discount rate in C3P2 was later revised and eventually the Standard Scenario was eliminated altogether. This methodology for discounting is not used in most current applications where the greatest present value of accumulated deficiencies (GPVAD) are calculated.

* This form is not intended for minor corrections, such as formatting, grammar, cross-references or spelling. Those types of changes do not require action by the entire group and may be submitted via letter or email to the NAIC staff support person for the NAIC group where the document originated.

NAIC Staff Comments:

Dates: Received	Reviewed by Staff	Distributed	Considered
8/17/23	K.K		
Notes: APF 2023-10			

Attachment

VM-20

Section 5: Stochastic Reserve

For a group of one or more policies for which a SR is to be calculated, the company shall calculate the SR as follows:

- A. Project cash flows in compliance with the applicable requirements in Section 7, Section 8 and Section 9 using the stochastically generated scenarios described in Section 7.G.2., and further described in Appendix 1. In determining the SR, the company shall determine the number and composition of subgroups for aggregation purposes in a manner that is consistent with how the company manages risks across products with significantly different risk profiles, and that reflects the likelihood of any change in risk offsets that could arise from distributional shifts between product types due to, for example, differing policyholder behavior. If a company is managing the risks of two or more products with significantly different risk profiles as part of an integrated risk management process, then the products may be combined into the same subgroup for aggregation purposes. If policies from more than one VM-20 Reserving Category are included in such a subgroup, the reserve for each VM-20 Reserving Category shall also be determined, as described in Section 5.G.

Guidance Note: Aggregation refers to the number and composition of subgroups of policies that are used to combine cash flows. Aggregating policies into a common subgroup allows the cash flows arising from the policies for a given stochastic scenario to be netted against each other (i.e., allows risk offsets between policies to be recognized). Note Section 5.G regarding the calculation of the SR on a stand-alone basis for each VM-20 Reserving Category.

- B. Calculate the scenario reserve for each stochastically generated scenario as follows using the method described in either Section 5.B.1 or Section 5.B.2:

1. Present Value Method

- a. For each model segment at the model start date and end of each projection year, calculate the discounted value of the negative of the projected statement value of general account and separate account assets using the path of discount rates for the model segment determined in compliance with Section 7.H.4 from the projection start date to the end of the respective projection year. The balance of policy loans on the valuation date (if explicitly modeled under Section 7.F.3.b) and the balance of separate account assets on the valuation date are modeled each period in compliance with the applicable changes in these asset balances as defined in Section 7.

Guidance Note: The projected statement value of general account and separate account assets for a model segment may be negative or positive.

- b. Sum the amounts calculated in Subparagraph 1 above across all model segments at the model start date and end of each projection year.

Guidance Note: The amount in Subparagraph 2 above may be negative or positive.

- c. Set the scenario reserve equal to the sum of the statement value of the starting assets across all model segments and the maximum of the amounts calculated in Subparagraph 2b above.

2. Direct Iteration Method

Solve for the amount of starting assets which, when projected along with all contract cash flows, result in the defeasement of all projected future benefits and expenses at the end of the projection horizon with no positive accumulated deficiencies at the end of any projection year during the projection period.

- C. Rank the scenario reserves from lowest to highest.
- D. Calculate CTE 70.
- E. Determine any additional amount needed to capture any material risk included in the scope of these requirements but not already reflected in the cash-flow models using an appropriate and supportable method and supporting rationale.
- F. Add the CTE amount (D) plus any additional amount (E) less the positive or negative PIMR balance allocated to the group of one or more policies being modeled under Section 7.D.7.
- G. The SR equals the amount determined in Section 5.F. If the company includes policies from two or more VM-20 Reserving Categories in a subgroup for aggregation purposes as described in Section 5.A, the company shall calculate the SR for policies from each VM-20 Reserving Category on a stand-alone basis by following the process of A through F above.

Section 7.H

- 4. The company shall use the path of one-year Treasury interest rates in effect at the beginning of each projection year multiplied by 1.05 for each model segment within each scenario as the discount rates in the SR calculations in Section 5. In determining the scenario reserve using the Present Value Method under Section 5.B.1., accumulated deficiencies shall be discounted at the NAER on additional assets, as defined in Section 7.H.5.

Guidance Note: The use of different discount rate paths for the deterministic and scenario reserves is driven by differences in methodology. The DR is based on a present value of all liability cash flows, with the discount rates reflecting the investment returns of the assets backing the liabilities. The scenario reserve is based on a starting estimate of the reserve and assets that support that estimate, plus the greatest present value of accumulated deficiencies. Here, the discount rates are a standard estimate of the investment returns of only the marginal assets needed to eliminate either a positive or negative deficiency.

5. Determination of NAER on Additional Invested Asset Portfolio

- a. The additional invested asset portfolio for a scenario is a portfolio of general account assets as of the valuation date.- The additional invested asset portfolio can be comprised of one or more of the following:
 - i. Pro-rata slice of the starting asset portfolio;
 - ii. Cash that is immediately reinvested; and
 - iii. A combination of assets that would be transferred to the portfolio from the general account to cover a potential shortfall.

It is assumed that the accumulated deficiencies for this scenario projection are known. Assets selected for the additional invested asset portfolio should be based on the same allocation methodology for all scenarios.

The company should be able to support that these additional assets are not double counted across various PBR calculations. For example, it would be inappropriate to assume the same asset was

“transferred to the portfolio from the general account” for the same economic scenario for VM20, VM-21, and VM-22.

b. To determine the NAER on additional invested asset portfolio for a given scenario:

i. Project the additional invested asset portfolio as of the valuation date to the end of the projection period,

a) Investing any cash in the portfolio and reinvesting all investment proceeds using the company’s investment policy, subject to the alternative investment strategy described in section 7.E.1.g.

b) Excluding any liability cash flows.

c) Incorporating the appropriate returns, defaults and investment expenses for the given scenario.

iii. Determine a vector of annual earned rates that replicates the growth in the additional invested asset portfolio from the valuation date to the end of the projection period for the scenario. This vector will be the NAER for the given scenario.

Guidance Note: There are multiple ways to select the additional invested asset portfolio at the valuation date. Similarly, there are multiple ways to determine the earned rate vector. The company shall be consistent in its choice of methods, from one valuation to the next.

VM-31

Section 3.D.2

i. Scenario Reserve Method – Identification of the method used to determine the scenario reserve, either (1) the present value method described in Section 5.B.1 of VM-20; or (2) the direct iteration method described in VM-20 Section 5.B.2.

Section 3.D.6

- i. Net Asset Earned Rate – For each model segment’s DR: ~~i~~ If the gross premium valuation method outlined in VM-20 Section 4.A was used, a listing or graph of the path of calculated NAER for all years of the projection and an explanation of any abnormally high or low NAER values or unusual patterns over time. For each model segment’s SR, if the present value method outlined in VM-20 Section 5.B.1 was used, a description of the vectors of NAER, including graphs or tables of summary statistics helpful to the understanding of the NAER vectors produced for each scenario, with a statement that a complete listing of NAER will be made available in electronic spreadsheet format upon request.
- v. Additional Invested Asset Portfolio – For each model segment’s SR, if the present value method outlined in VM-20 Section 5.B.1 was used, a description of the portfolio of additional assets needed to fund the greatest present value of the accumulated deficiency for each scenario, including a description of the calculation process and the types of assets included.